

**THREE-FINGERED WELDING GLOVE**Related Applications

[0001] This application is related to, and hereby incorporates by reference, the following patent applications:

[0002] U.S. Patent Application entitled "FOUR-FINGERED WELDING GLOVE", filed on even date herewith and having Application No. \_\_\_\_\_ (Attorney Docket No. GRANP3.002AUS); and

[0003] U.S. Patent Application entitled "FIVE-FINGERED WELDING GLOVE", filed on even date herewith and having Application No. \_\_\_\_\_ (Attorney Docket No. GRANP3.003AUS)

Background of the InventionField of the Invention

[0004] The present invention relates to a three-fingered welding glove, and more particularly, to a three-fingered welding glove which is manufactured by sewing the front palm piece in various shapes, the finger piece cut in various shapes on an integrated sheet, and the front shell piece, to form a glove used to protect a hand from spouting high-temperature flames at a welding work place where separated metal members are combined by applying heat to the metal members, so that a pressing and hardening phenomenon occurring on the surface of the hand and between fingers is removed by moving a sewing line and removing a suture and the suture is prevented from being unsewn, thus improving a work performance by reducing fatigue on the hand during work.

Description of the Related Technology

[0005] In general, gloves used during a welding operation are manufactured by using superior quality leather which is rough and thick and has a flame retardant effect to prevent the hands from being burnt by sprouting high-temperature flames.

[0006] The welding operation requires high technique and concentration. Since a welder holds a welding apparatus for a long time, once the welding operation starts, the respective surfaces of the hand holding for the welding operation, such as the palm surface,

the side surface, the back of a hand, and the in-between finger portion, are severely pressed by sewing line portions where thick leathers are folded to be sewn, so that a continuous welding operation is difficult.

#### Summary of Certain Inventive Aspects of the Invention

[0007] One aspect of the invention provides a three-fingered welding glove which is manufactured by forming a front index finger portion extending from a front shell end and having a wing at the side surface thereof, a rear index finger portion, and a rear shell portion into an integrated sheet, and sewing a separately cut and semicircular front shell piece having a wing formed at the side surface thereof on the front shell end. Thus, a rear side sewing line combined with the other end is removed so that a pressing and hardening phenomenon on the rear surface is solved and the sewing line on the rear surface is prevented from being disconnected by high-temperature flames. The wing formed at the side surface of the front index finger portion and the wing formed at the side surface of the semicircular front shell piece moves the sewing line toward the back of a hand from the palm of a hand, so that the sewing line existing on the index finger and the palm side of a hand of the shell portion is disposed at the back of a hand of the index finger and the shell portion. Thus, a pressing and hardening phenomenon between the front index finger and the front shell portion is removed. Since the integrated sheet includes the rear index finger portion, the rear shell portion, the front shell portion, and the front index finger portion, the sewing line of the outer side of a hand is removed so that a pressing and hardening phenomenon is solved.

[0008] Another aspect of the invention provides a three-fingered welding glove used to protect a hand from high temperature, which comprises a front palm piece in which a front index finger portion, extending from a front shell end and having a wing formed at a side surface thereof, and a rear index finger portion are integrally cut, a front shell piece coupled to the front palm piece and sewn on an upper end of the front shell end to have a semicircular shape and a wing formed at a side surface thereof, and a rear shell piece separately cut and sewn on an upper surface of the front palm piece and the front shell piece.

[0009] The front palm piece and the rear shell piece are formed into an integrated sheet.

[0010] The wing formed on the front index finger portion and the wing formed on the front shell piece are bent at the same angle and the rear side stitch point A is moved upward as much as the bending angle.

[0011] In another aspect of the invention, a three-fingered welding glove comprises, an integrated sheet where a front shell portion extending from a front index finger end and having a wing at a side surface thereof, a rear shell portion, and a rear index finger portion are integrally cut, and a front index finger piece coupled to the integrated sheet, separately cut and sewn on an upper end of the front index finger end of the integrated sheet, and having a wing formed at side surface thereof.

[0012] In another aspect of the invention, a three-fingered welding glove comprises a front palm piece where a thumb hole is formed at a lower side of a rectangle and a front finger end is formed at an upper end thereof, a finger piece sewn on the front finger end, in which a separately cut finger shell portion and a finger index finger are formed, and a rear shell piece where a separately cut rear index finger portion and a rear shell portion are formed.

[0013] In another aspect of the invention, a three-fingered welding glove comprises a hand back piece where a front index finger portion having a wing formed at a side surface thereof, a rear index finger portion, and a rear shell portion are integrally cut, and a front shell piece separately cut, coupled to the hand back piece, and having a wing formed at a side surface thereof.

[0014] In another aspect of the invention, a three-fingered welding glove comprises an integrated sheet where a front shell portion, a front index finger portion, a rear index finger portion, and a rear shell portion are integrally cut, and an in-between finger piece coupled to the integrated sheet, separately cut, and sewn between the front shell portion and the front index finger portion.

[0015] Another aspect of the invention provides a three-fingered welding glove, wherein a separately cut in-between finger piece is sewn, between a front shell portion and a front index finger portion, on an integrated sheet where a rear index finger portion, a rear shell portion, the front shell portion, and the front index finger portion are integrally cut.

### Brief Description of the Drawings

[0016] The above and other features and advantages of embodiments of the present invention will become more apparent by describing in detail preferred embodiments thereof with reference to the attached drawings in which:

[0017] FIGS. 1A through 1C illustrate the back of a hand, the palm of a hand, and the cutting pattern of a typical welding glove;

[0018] FIGS. 2A through 2D illustrate the back of a hand, the palm of a hand, the cutting pattern, and the 3-D shape of a three-fingered welding glove according to a first preferred embodiment of the present invention;

[0019] FIGS. 3A through 3D illustrate the back of a hand, the palm of a hand, the cutting pattern, and the 3-D shape of the three-fingered welding glove according to the first preferred embodiment of the present invention, which is formed into an integrated sheet;

[0020] FIGS. 4A through 4D illustrate the back of a hand, the palm of a hand, the cutting pattern, and the 3-D shape of the three-fingered welding glove according to a second preferred embodiment of the present invention, in which a rear side stitch point A on the integrated sheet is moved upward;

[0021] FIGS. 5A through 5D illustrate the back of a hand, the palm of a hand, the cutting pattern, and the 3-D shape of a three-fingered welding glove according to a second preferred embodiment of the present invention, in which a rear side stitch point A on the integrated sheet is moved upward;

[0022] FIGS. 6A through 6D illustrate the back of a hand, the palm of a hand, the cutting pattern, and the 3-D shape of a three-fingered welding glove according to a third preferred embodiment of the present invention, in which the front palm piece is separated from the rear shell piece;

[0023] FIGS. 7A through 7C illustrate the back of a hand, the palm of a hand, and the cutting pattern of a three-fingered welding glove according to a fourth preferred embodiment of the present invention, in which the rear side suture is removed and the front suture is sewn by being folded;

[0024] FIGS. 8A through 8D illustrate the back of a hand, the palm of a hand, the cutting pattern, and the 3-D shape of a three-fingered welding glove using an integrated sheet according to a fifth preferred embodiment of the present invention; and

[0025] FIGS. 9A through 9D illustrate the back of a hand, the palm of a hand, the cutting pattern, and the 3-D shape of a three-fingered welding glove according to a sixth preferred embodiment of the present invention, in which the integrated sheet is modified.

#### Detailed Description of Certain Embodiments of the Invention

[0026] FIGS. 1A through 1C show a typical welding glove. As shown in the drawings, a front side piece 100, on which a front shell portion 1, a front index finger portion 2, and a rear index finger portion 3 where a wing 3a is formed are formed and a thumb hole 4 is formed at a lower end thereof, is sewn on a rear shell piece 200 on which a separated cut wing 200a is formed. A thumb piece 5 is sewn on the thumb hole 4 and a sewing line protection strap 6 is sewn on the upper surface of the sewn thumb piece 5. Then, a cuff 7 is sewn on a lower end to manufacture a welding glove. A space formed by the front shell portion and the rear shell portion accommodates the middle finger, the ring finger, and the little finger together so that a pressing and hardening phenomenon occurring between fingers is removed and use of the hand is made smooth.

[0027] However, in the above glove, the wing of the rear index finger portion and the wing of the rear shell piece extends from the back of a hand to the palm side of a hand and a sewing line is formed at the palm side so that, when a welder holds a welding apparatus, the pressing and hardening phenomenon occurs between the front index finger portion and the front shell portion. Also, since the suture which is inevitably formed in manufacturing gloves needs to be sewn by being folding the opposite pieces together, the suture may occur a severe pain.

[0028] Moreover, at a work site with the little finger portion fixed, the pressing and hardening phenomenon occurs in the blade side of a hand due to the suture. In particular, the suture formed between the rear index finger portion and the rear shell piece may be unsewn, as a thread of the suture is disconnected by the spouting flames, so that hot flames intruding between a gap burns the hand and the glove cannot be used any longer.

[0029] Referring to FIGS. 2A through 2D, in a three-fingered welding glove according to a first preferred embodiment of the present invention which is used to protect a hand from high-temperature flames, a front shell piece 400 having a semicircular shape and a wing 400a formed on the side surface thereof is sewn on a front palm piece 300, in which a

front index finger portion 2, extending from a front shell end 8 and having a wing 2a formed on the side surface thereof, and a rear index finger portion 3, are integrally cut, at the upper end of the front shell end 8, and a separately cut rear shell piece 200 is sewn on the upper surface of the palm piece 300.

[0030] In the present preferred embodiment, a welding glove is manufactured by sewing a thumb piece 5, a sewing line protection strap 6, and a cuffs 7 and sewing the front shell piece 400 having a semicircular shape and the wing 400a formed on the side surface thereof on the front palm piece 300, in which the front index finger portion 2, extending from the front shell end 8 and having the wing 2a formed on the side surface thereof, and the rear index finger portion 3, are integrally cut, at the upper end of the front shell end 8, and sewing the separately cut rear shell piece 200 on the upper surface of the palm piece 300.

[0031] Thus, the sewing lines of the typical welding glove existing on the front index finger portion 2 of the front side piece 100 and the palm surface of the front shell portion 1 are moved toward the rear index finger portion 3 and the rear shell piece 200, so that a pressing and hardening phenomenon is removed which occurs on the front index finger portion 2 of the front side piece 100 and the palm surface of the front shell portion 1 when a welder holds a welding apparatus. Thus, despite of a long-time work, fatigue in the hand is reduced so that work efficiency is improved.

[0032] FIGS. 3A through 3D show that the front palm piece and the rear shell piece are formed into an integrated sheet and the stitch point is moved upward. As shown in FIGS. 3A through 3D, the front index finger portion 2, the rear index finger portion 3, and the rear shell portion 9, which extend to the front shell end 8 and have the wing 2a at the side surface thereof, forms an integrated sheet 500 in the form in which the front palm piece 300 and the rear shell piece 200 are combined to each other.

[0033] The glove according to one embodiment of the present invention is manufactured by sewing the front shell piece 400 which is semicircular and separately cut and has a wing formed on the side surface thereof, on the upper end of the front shell end 8 of the integrated sheet 500, and sewing the thumb piece 5, the sewing line protection strap 6, and the cuffs 7.

[0034] Thus, since the welding glove is manufactured by forming the integrated sheet 500 in which the side end of the rear index finger portion 3 of the front palm piece 100

is connected to the side end of the rear shell piece 200, the sewing line formed between the rear index finger portion 3 and the rear shell piece 200 is removed so that, even when a welder holds a thing or continuously holds a welding apparatus to perform work, the pressing and hardening phenomenon due to the sewing line is removed. In particular, a problem that high-temperature flames spout over the sewing line on the rear surface to disconnect the suture so that the hand is burnt, is prevented.

[0035] As shown in FIGS. 4A through 4D, the wing 2a formed on the front index finger portion 2 and the wing 400a formed on the separately cut front shell piece 400 are bent at the same angle and the rear side stitch point A is moved upward.

[0036] In one embodiment of the invention, the front shell piece wing 400a formed at the side end of the front shell piece 400 is bent counterclockwise and the front index finger portion wing 2a formed on the side end of the front index finger portion 2 is bent clockwise. The front index finger portion wing 2a is bent as much as the front shell piece wing 400a. The rear side stitch point A of the rear index finger portion 3 and the rear shell portion 9 is moved upward on the rear surface so that the pressing and hardening phenomenon between the rear index finger portion 3 and the rear shell portion 9 is removed.

[0037] FIGS. 5A through 5D illustrate the back of a hand, the palm of a hand, the cutting pattern, and the 3-D shape of a three-fingered welding glove according to a second preferred embodiment of the present invention. In the present preferred embodiment, a welding glove is manufactured by sewing a front index finger piece 600 which is separately cut and has a wing 600a formed at side surface thereof on the upper end of the front index finger end 10 of an integrated sheet 500a where the front thumb portion 1 extending from the front index finger end 10 and having the wing 1a formed on the side surface thereof, the rear shell portion 9, and the rear index finger portion 3, are integrally cut, at the upper end of the front index finger end 10 of the integrated sheet 500a.

[0038] The three-fingered welding glove according to the second preferred embodiment of the present invention is manufactured by sewing the front index finger piece 600, which is separately cut and has the wing 600a formed at the side surface thereof, on the upper end of the front index finger end 10 of the integrated sheet 500a, the side end of the rear index finger portion 3 and the side end of the front index finger end 10, and the thumb piece 5, the sewing line protection strap 6, and the cuffs 7.

[0039] Thus, the pressing and hardening phenomenon occurring at the outer side of a hand is removed at a site where work is performed while the little finger portion is fixed.

[0040] FIGS. 6A through 6D illustrate the back of a hand, the palm of a hand, the cutting pattern, and the 3-D shape of a three-fingered welding glove according to a third preferred embodiment of the present invention, in which the front palm piece is separated from the rear shell piece;

[0041] As shown in FIGS. 6A through 6D, the welding glove according to the present preferred embodiment is manufactured by sewing a finger piece 700 where a finger shell portion 12 and an index finger portion 13, which are separately cut, are formed on a front palm piece 300a where a thumb hole 4 is formed at a lower side of a rectangle and a front finger end 11 is formed at the upper end thereof, and a rear shell piece 200b, where a rear index finger portion 3 and a rear shell portion 9 are formed, on the front palm piece.

[0042] Thus, since the finger piece 700 sewn on the upper end of the front finger end 11 forms the finger shell portion 12 and the index finger portion 13 so as to secure a space between the index finger and the shell portion, the pressing and hardening phenomenon between the fingers is removed so that finger motion is made free.

[0043] FIGS. 7A through 7C illustrate the back of a hand, the palm of a hand, and the cutting pattern of a three-fingered welding glove according to a fourth preferred embodiment of the present invention, in which the rear side suture is removed and the front suture is sewn by being folded.

[0044] As shown in FIGS. 7A through 7C, the welding glove according to the present preferred embodiment is manufactured by sewing a front shell piece 900, where a wing 900a is formed at the side surface thereof which is separately cut, on the hand back piece 800 where the front index finger portion 2 having a wing 2a formed at the side surface thereof, the rear index finger portion 3, and the rear shell portion 9 are integrally cut.

[0045] Thus, in the present preferred embodiment, since the sewing line formed on the rear surface of the typical welding glove is moved to the palm surface and sewn by being folded, a phenomenon that the sewing line is disconnected by the high-temperature flames so that the hand is burnt is prevented and the pressing and hardening phenomenon occurring on the back of a hand is removed.



[0046] FIGS. 8A through 8D illustrate the back of a hand, the palm of a hand, the cutting pattern, and the 3-D shape of a three-fingered welding glove using an integrated sheet according to a fifth preferred embodiment of the present invention.

[0047] As shown in FIGS. 8A through 8D, the welding glove is manufactured by sewing a separately cut finger in-between portion 1000, between the front shell portion 1 and the front index finger portion 2, on an integrated sheet 500b where the front shell portion 1, the front index finger portion 2, the rear index finger portion 3, and the rear shell portion 9 are integrally cut.

[0048] That is, in the present preferred embodiment, the welding glove is manufacture by sewing the finger in-between portion 1000 to be folded diagonally, between the front shell portion 1 and the front index finger portion 2, on the integrated sheet 500b, and the thumb piece 5, the sewing line protection strap 6, and the cuffs 7.

[0049] Thus, since the in-between finger piece 1000 is simply sewn between the shell portion and the index finger portion of the integrated sheet 500b, manufacturing is conveniently performed and working time is reduced. Also, since the whole portion is cut in the integrated sheet 500b, the sewing line is remarkably reduced so that the hand pressing and hardening phenomenon is fundamentally prevented.

[0050] FIGS. 9A through 9D illustrate the back of a hand, the palm of a hand, the cutting pattern, and the 3-D shape of a three-fingered welding glove according to a sixth preferred embodiment of the present invention.

[0051] As shown in FIGS. 9A through 9D, the separately cut in-between finger piece 1000 is sewn by being bent between the front shell portion 1 and the front index finger portion 2, on an integrated sheet 500c where the rear index finger portion 3, the rear shell portion 9, the front shell portion 1, and the front index finger portion 2 are integrally cut.

[0052] Thus, the pressing and hardening phenomenon occurring at the outer side of a hand is removed at a site where work is performed while the little finger portion is fixed.

[0053] As described above, in the three-fingered welding glove according to the present invention, since the front index finger portion extending from the front shell end, the rear index finger portion, and the rear shell portion are formed into an integrated sheet and the separately cut front shell piece is sewn, the sewing line on the rear surface is removed so that

the pressing and hardening phenomenon on the rear surface is removed and the hand is prevented from being burnt by high-temperature flames as the sewing line is disconnected.

**[0054]** Also, since the wings formed on the front shell piece and the front index finger portion are respectively bent such that the rear side stitch point is moved upward, a space is formed between the rear shell piece and the rear index finger portion so that the pressing and hardening phenomenon is removed.

**[0055]** Also, since the front index finger end, the front shell portion, the rear shell portion, and the rear index finger portion are formed on the integrated sheet and the separately cut front index finger piece is sewn on the front index finger end to be folded, pain in the outer side of a hand is removed at a site where welding is performed with the little finger fixed.

**[0056]** Also, since the separately cut finger piece is sewn to be folded on the front palm piece and the rear piece where the rear index finger and the rear shell portion are formed is sewn on the front piece, the sewing line on the rear side of the glove is removed.

**[0057]** Also, since the front shell portion, the front index finger portion, the rear index finger portion, and the rear shell portion are formed into an integrated sheet and the in-between finger piece is simply sewn, manufacturing of the glove is made easy and working time is reduced.

**[0058]** Also, since the front index finger portion, the front shell portion, the rear shell portion, and the rear index finger portion are formed into an integrated sheet and the in-between finger piece is simply sewn, pain in the outer side of a hand is removed at a site where welding is performed with the little finger fixed.

**[0059]** While this invention has been particularly shown and described with reference to preferred embodiments thereof, it will be understood by those skilled in the art that various changes in form and details may be made therein without departing from the spirit and scope of the invention as defined by the appended claims.